

D/A3185

AMENDMENT(S) TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. – 13. (canceled)

14. (original) A drop generator comprising:
a pressure chamber;
an inlet channel connected to the pressure chamber;
an outlet channel connected to the pressure chamber;
the outlet channel including a first circular outlet channel section connected to the pressure chamber, a first non-circular outlet channel section connected to the first circular outlet channel section, a second circular outlet channel section connected to the first non-circular outlet channel section, and a second non-circular outlet channel section connected to the second circular outlet section; and
a drop emitting nozzle disposed at an end of the second non-circular outlet channel.

15. (original) The drop generator of claim 14 further including a piezoelectric element.

16. (original) The drop generator of claim 14 wherein the inlet channel receives melted solid ink.

D/A3185

17. (original) The drop generator of claim 14 wherein at least one of the first circular section and the second circular section includes a first circular sub-section and a second circular sub-section.

18. (original) The drop generator of claim 14 wherein the first non-circular section has an oval cross-section.

19. (original) The drop generator of claim 14 wherein the non-circular section has a generally egg-shaped cross-section.

20. (original) The drop generator of claim 14 wherein the non-circular section has a generally egg-shaped cross-section, and wherein the nozzle is disposed at a smaller end of the egg-shaped cross-section.

21. (original) The drop generator of claim 14 wherein the nozzle is disposed at an end of the non-circular section.

22. (original) The drop generator of claim 14 wherein the ink pressure chamber has a cross-section that is generally parallelogram shaped.

23. (original) The drop generator of claim 14 wherein the nozzle emits drops having a mass in the range of about 20 nanograms to about 30 nanograms.

24. (original) The drop generator of claim 14 wherein the pressure chamber is operated at a frequency of about 23 KHz to about 30 KHz.

D/A3185

25. (original) The drop generator of claim 14 wherein the outlet channel has a length in the range of about 59/1000 inches to about 79/1000 inches.

26. (original) The drop generator of claim 14 wherein the outlet channel has a length in the range of about 69/1000 inches to about 77/1000 inches.

27. (original) The drop generator of claim 14 wherein the first circular outlet channel section has a length that is less than about 20/1000 inches.

28. (original) The drop generator of claim 14 wherein the first circular outlet channel section has a length in range of about 11/1000 inches to about 13/1000 inches.

29. (original) The drop generator of claim 14 wherein the second circular outlet channel section has a length that is less than about 40/1000 inches.

30. (original) The drop generator of claim 14 wherein the second circular outlet channel section has a length in the range of about 24/1000 inches to about 26/1000 inches.

31. (original) The drop generator of claim 14 wherein the first circular outlet channel section has an average diameter in the range of about 10/1000 inches to about 20/1000 inches.

D/A3185

32. (original) The drop generator of claim 14 wherein the first circular outlet channel section has an average diameter in the range of about 11/1000 inches to about 13/1000 inches.

33. (original) The drop generator of claim 14 wherein the second circular outlet channel section has an average diameter in the range of about 8/1000 inches to about 15/1000 inches.

34. (original) The drop generator of claim 14 wherein the second circular outlet channel section has an average diameter in the range of about 12/1000 inches to about 14/1000 inches.

35. (original) The drop generator of claim 14 wherein the first non-circular outlet channel section has a length that is less than about 40/1000 inches.

36. (original) The drop generator of claim 14 wherein the first non-circular outlet channel section has a length in the range of about 27/1000 inches to about 29/1000 inches.

37. (original) The drop generator of claim 14 wherein the second non-circular outlet channel section has a length in the range of about 4/1000 inches to about 10/1000 inches.

38. (original) The drop generator of claim 14 wherein the second non-circular outlet channel section has a length in the range of about 7/1000 inches to about 9/1000 inches.

D/A3185

39. (original) The drop generator of claim 14 wherein the first non-circular outlet channel section has an effective diameter of about 10/1000 inches to about 20/1000 inches.

40. (original) The drop generator of claim 14 wherein the first non-circular outlet channel section has an effective diameter of about 15/1000 inches to about 17/1000 inches.

41. (original) The drop generator of claim 14 wherein the second non-circular outlet channel section has an effective diameter of about 8/1000 inches to about 16/1000 inches.

42. (original) The drop generator of claim 14 wherein the second non-circular outlet channel section has an effective diameter of about 13/1000 inches to about 16/1000 inches.

43. (original) A drop generator comprising:
a pressure chamber;
an inlet channel connected to the pressure chamber;
an outlet channel connected to the pressure chamber, the outlet channel having an outlet channel axis;
the outlet channel including a first circular outlet channel section connected to the pressure chamber, a first non-circular outlet channel section connected to the first circular outlet channel section, a second circular outlet channel section connected to the first non-circular outlet channel section, and a second non-circular outlet channel section connected to the second circular outlet section;

D/A3185

wherein the first circular outlet channel section, the first non-circular outlet channel section, and the second circular outlet channel section are substantially centered on the outlet channel axis; and
a nozzle disposed at an end of the second non-circular outlet channel section and offset from the outlet channel axis.

44. (presently amended) The drop generator of claim 43 wherein the second non-circular outlet channel section ~~non-circular section~~ has a generally egg-shaped cross-section.

45. (original) The drop generator of claim 43 wherein the first circular outlet channel section includes a plurality of circular sub-sections.

46. (original) The drop generator of claim 43 wherein the second circular outlet channel section includes a plurality of circular sub-sections.

47. (original) The drop generator of claim 43 wherein the ink pressure chamber has a cross-section that is generally parallelogram shaped.

48. (original) The drop generator of claim 43 wherein the nozzle emits drops having a mass in the range of about 20 nanograms to about 30 nanograms.

49. (original) The drop generator of claim 43 wherein the pressure chamber is operated at a frequency of about 23 KHz to about 30 KHz.

50. (new) A drop generator comprising:
a pressure chamber;

D/A3185

an inlet channel connected to the pressure chamber;
an outlet channel connected to the pressure chamber, the outlet
channel having an outlet channel axis;
a drop emitting nozzle disposed at an end of the outlet channel;

and

the outlet channel including a circular outlet channel section and a
non-circular outlet channel section having an oval cross-section.

51. (new) A drop generator comprising:
a pressure chamber;
an inlet channel connected to the pressure chamber;
an outlet channel connected to the pressure chamber, the outlet
channel having an outlet channel axis;
a drop emitting nozzle disposed at an end of the outlet channel;

and

the outlet channel including a circular outlet channel section and a
non-circular outlet channel section having a generally egg-shaped cross-
section.

52. (new) The drop generator of claim 51 wherein the nozzle is
disposed at a smaller end of the egg-shaped cross-section.

53. (new) A drop generator comprising:
a pressure chamber;
an inlet channel connected to the pressure chamber;
an outlet channel connected to the pressure chamber, the outlet
channel having an outlet channel axis;

D/A3185

a drop emitting nozzle disposed at an end of the outlet channel,
wherein the nozzle emits drops having a mass in the range of about 20
nanograms to about 30 nanograms; and

the outlet channel including a circular outlet channel section and a
non-circular outlet channel section.